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## READING TESTS

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CHARLES H. JUDD  
University of Chicago

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The Committee on Standards and Tests of the National Council of Education has authorized its individual members to seek the co-operation of school officers in different parts of the country in collecting materials. This paper was prepared with a view to securing such co-operation in testing reading. The author of the paper invites correspondence from anyone who will undertake this type of work. Fortunately Mr. Courtis' paper which follows this came to hand in time to appear in the same issue. Mr. Courtis has followed a somewhat different method from that here suggested. The author of this paper wishes to lend all support possible to Mr. Courtis. If school officers can carry out the work more easily by that method, the results will be quite as useful to the Committee on Standards. The chief purpose of both papers is to get work along this line started at many centers.

Many teachers are prejudiced against the measurement of school work because they assume that such measurement means the imposition of arbitrary outside standards on their pupils. They assume that someone believes that he has a definite yardstick by which he can determine the efficiency of all the children in the United States in their reading or arithmetic. Such prejudices would disappear entirely if the distinction between social standards and physical standards of measurement were clearly apprehended.

The fact is that every teacher is employing standards in judging the efficiency of various children in his or her class. If a given boy in the fourth grade reads poorly as compared with the other members of the class, if he shows no ability to understand the passage which the other members of the class easily understand, the teacher grades this boy as inefficient in the work of the class. In this case the boy has been measured by comparison with other members of his own class. The standard to which he has been subjected is a social standard. It is not held by his teacher that he ought to have the mental ability of an older boy, and the teacher would not be satisfied with this fourth-grade boy on the ground that he shows great efficiency in reading the primer used by the first grade. In other words, the boy must prove himself to be like

the other members of the group with which he is associated. If he can do this he is judged to be efficient; if he cannot he is judged to be in some sense deficient.

The kind of comparison which the teacher is able to make within the limits of her own class ought to be extended in such a way that the class as a whole may be compared to larger units of school organization. That is, the efficiency of a fourth-grade class can be determined by comparing it with classes above and below, exactly as the efficiency of a single boy can be determined by comparing him with the other members of his class; or a fourth grade in one school building can be compared with similar grades in other school buildings, or other school systems. This comparing of one class with another is also a common fact in school experience. A certain boy comes to a given school, transferred from a neighboring school. We have no hesitation whatever in condemning the school from which he comes if this product of the school does not succeed in taking his place with the class which he enters. In other words, we judge schools by their products, and we formulate our judgment in detail by comparing one product with another product. In the same way the students who come to a given high school from several neighboring elementary schools are all compared with each other and judgments are formed by the high-school teacher regarding the efficiency or deficiency of the various elementary schools which contribute their students to the high school. Here again standards are social standards rather than absolute standards.

Even when the child's ability is measured by what seems to be an absolute standard, as by his actual solving of certain problems which are set for him, there are certain variable characteristics of the standard which must be taken into consideration. Thus the difficulty of solving the problems chosen is an important consideration in any case. If, for example, the ten problems set are very easy, the child who fails in one of these problems is not as efficient as the child who fails in several problems of a difficult set. In other words, the level at which the work is done becomes a matter of importance, and the level which is expected is determined by comparison, not by some absolute measure. Other considerations are, of course, of equal importance. How long were the

children allowed to work on the problems? Was their preparation immediately before the test directed toward this particular examination or was it general in character? In other words, though a test seems at the outset to be an absolute test of the child's ability, it turns out on analysis to contain many elements which differ with the social setting in which the pupil works, and the absolute character of the standard is seen to be a mere fiction. The standard is in reality a social standard and its value depends upon comparison with other school situations and with other groups of individuals who are undertaking similar work.

With this definition of the meaning of standards in mind, let us consider some of the comparative problems which are of importance in the teaching of reading in the elementary school. In the first place, it is obvious that a comparison of different grades in the same school system is a matter of great importance. If the child shows adequate progress as he passes from the second to the third grade, from the third to the fourth grade, and so on, we may be satisfied that the school is doing efficient work even if the ability to read at any given point is in the absolute not great. Or, to put the matter in another way, the grade which is steadily improving shows a higher degree of efficiency than a grade which is improving less rapidly, even though the grade which is improving less rapidly shows a fair degree of ability. In preparing our test, therefore, we should aim to determine the rate of improvement during the different grades.

Second, there are two fundamentally different types of reading. There is reading which is oral and reading which is silent. If one notes the sharp contrast between little children and adults, he finds that oral reading is the common mode of reading among little children and the very exceptional form of reading in adult life. The ordinary adult finds it so much more convenient and easy to read to himself that he does not read aloud except under the most unusual circumstances. This distinction between oral and silent reading is not one which has been clearly recognized in school work. School work has for the most part dealt with oral reading. A comparison of the two types of reading will soon convince even the casual observer that oral reading is a rather slow and inconvenient

form of reading as compared with silent reading. Furthermore, oral reading does not exhibit the highest training given in the schools, therefore a comparison of oral and silent reading will help in making a systematic comparison of the mental development of children at different stages of school work.

Third, reading is after all merely a secondary form of activity. What we want primarily in the reading class is ability to understand the passages which are read. In the lower grades the mastery of words is itself so difficult a problem that the child is able only very slowly to take in information from the passage which he reads. In the upper grades, on the other hand, the comprehension of the passage is so fully developed that the chief value of reading in these later grades is the information which it gives. Little or no time is required in the upper grades for the formal process of pronouncing words or mastering sentence forms. The mechanics of reading, if we may use that phrase to distinguish the process of reading from the process of understanding, are mastered and the whole attention may now be concentrated on the significance of the passage. We have here an important contrast between pupils in different stages of advancement. If the little child expends most of his mental energy in reading the sentence and the older child expends most of his mental energy in getting the significance of the passage, we may, therefore, test the various children in different grades by inquiring into their ability to get the meaning of the passages which they read. We shall have to choose passages with different kinds of ideas and with different degrees of complexity; simple ideas and ideas which are easy to formulate will be given in the lower grades; more complex and difficult ideas in the upper grades. It would indeed be possible in some cases to use exactly the same passage all through the school for the purpose of finding out how the ability to get at the meaning progresses at different stages in education, but it will usually be found to be more practical to arrange an overlapping series of tests so that comparisons between the extremes may be made indirectly through intermediate tests which are applied only to smaller units of the school population. For example, we may make a comparison of the first three grades with each other. Then compare the third,

fourth, and fifth grades with each other, and finally the fifth, sixth, and seventh grades. The overlapping of the third and fifth grades, each appearing in two groups, will make it possible to get an idea of the relative ability of the first and eighth grades, or any other two grades in the series.

Another type of variation in the reading matter to be used is suggested by a consideration of the changing interests of children. There is a period in the intermediate grades when children exhibit a marked interest in the things in the physical world about them as contrasted with the people who go to make up the social world. Later in the adolescent period the social interests are renewed, and there is a marked interest in romantic or social literature. By testing the ability of children to get the meaning of different kinds of reading matter we gain some insight into the kinds of reading matter best suited to different stages of development. Children at one stage will get the meaning of one kind of reading matter most easily, while children at another stage of development will take up readily a totally different type of matter.

It would undoubtedly be advantageous in the interests of direct comparison if tests could be made all over the United States with the same material, that is, if the same passage could be presented to every third grade in the United States and the results carefully tabulated. We should then have a very illuminating study of the whole American school system. The disadvantage with such an effort at absolute uniformity is that while the passage itself might be the same, it would undoubtedly relate itself to the preparation of the different third grades in very different ways. It is conceivable that a third grade otherwise relatively inefficient would have just the preparation in words and ideas that would make it possible for that particular third grade to stand well in the test on the passage selected. Conceivably a third grade which had had an entirely different type of training might show very little ability with the particular passage chosen. We shall accordingly lose little by foregoing the use of a single passage. Each school system may select its own material, provided only the material is thoroughly analyzed and the results accompanied in every case by a statement of the material thus employed. After a number of tests of

this sort within single school systems have been carried out, we shall perhaps be prepared to undertake a more systematic and unified test of many school systems.

The first step in making tests is to select some simple phase of the reading process which can be clearly described and definitely determined. One such phase which offers itself as the simplest characteristic of most mental processes is the rate of speed. The rate at which a child reads is a very useful indication of efficiency. One has only to observe little children who are just learning to read to be impressed with the slowness of their mental operation. On the other hand, the fluent reading of an upper-grade child is a sign of his mastery of the mechanical side of the process. Furthermore, this test of rate will bring out very effectively the contrast between silent reading and oral reading. In the lower grades silent reading is a very slow, if not indeed an impossible, process. In the upper grades silent reading is a very rapid form of reading, much more rapid indeed than any form of oral reading. With the adult, oral reading is from two to three times as slow as silent reading.

With these suggestions regarding rate and the general character of comparative tests in mind, let a test in silent reading be carried out as follows. The teacher selects a passage to be read. She reads it silently herself and notes the time which it requires. It will be in the interests of later comparison if a group of teachers will select the same passage and all test first their own rate of silent reading. After selecting a suitable passage each child to be tested is supplied with a copy. The passage should of course be new to the child. He is told before he looks at the passage that he is to read it, getting as much of its meaning as he can, because he will be asked to tell on paper what is in the passage. At a given signal the reading begins. After three minutes, or whatever period the teacher's own test shows to be well within the time required to read the passage, a signal is given and the children mark how far they have gone and at once set about writing down all that they remember. They should be allowed as much time as they need for this part of the exercise. Sometimes, instead of asking the children to write down what they can recall, a series of questions may be

given which will bring out definitely the ability of the child to recall certain particular ideas.

Such a test as this should be made repeatedly and a continuous record should be kept for each child. A test is of little value if given as a single examination. It is of great value if it is used as a common routine of instruction.

Different kinds of reading matter should be used and different degrees of difficulty should be sought in the different passages.

The making and tabulating of the record does not involve as much labor as might be anticipated by one not acquainted with experimental methods. If each child indicates how far he has gone, the number of lines can readily be recorded. It is better in the interests of future comparisons for the teacher to reduce the record to number of words read, because lines are so different in different books. This reducing of the pupil's report in lines to number of words requires only a single counting. A check for the number of lines read is, of course, supplied by the number of ideas reproduced.

In order to measure a child's efficiency in getting meaning the passage should first be analyzed into ideas presented. The following is a passage thus analyzed by Professor Freeman for such a test. With this analysis the child's report can easily be rated. He has so and so many of the ideas presented in the original passage; or, as suggested above, suitable questions can be made up to draw out the ideas.

#### A BOY'S PET

In our town, | when a boy had a coon, | he had to have a box turned open side down | to keep it in, | and he had to have a little door in the box | to pull the coon out through | whenever he wanted to show it to other boys | or look at it himself, | which was forty or fifty times a day | when he first got it. |

He had to have a collar for the coon, | and a chain, | because a coon could gnaw through a string | in a minute.

The coon liked to stay inside his box, | where he had a bed of hay, | and whenever the boy pulled him out, | he did his best to bite the boy. | He knew no tricks; | his temper was bad; | he wouldn't even let a fellow see him eat, | and there was nothing about him, except the rings round his tail, that anybody would care for.

My boys' brother had a coon | that got away two or three times. | He ran up the tall locust tree | in front of the house, | and in a few minutes all the boys of the town would be there | telling his owner how to get him down.



Of course the only way was to climb for the coon, | which would be out at the point of a high and slender limb, | and would bite you awfully, | even if the limb didn't break under you; | while the boys kept yelling to you what to do, | and the dog just howled with excitement.

The last time the coon got away | he was discovered by moonlight | in the locust tree. | His owner climbed for him, | but the coon kept going higher and higher, | and at last he had to be left till morning. | In the morning he was not there, | or anywhere.

The test of oral reading is more difficult to conduct as a part of the regular work of the school. Individual oral reading tests are relatively easy and may be carried out like the silent test above described.

A teacher can, however, train herself to carry on the oral test in connection with the regular lesson. The teacher should call upon successive members of the class to read orally and should indicate the length of time that is consumed in the reading of each passage. A little training in noting the time of such reading will make it possible to check up a whole class very rapidly. The work will be much more efficiently done if one can use a stop watch, but, without this added convenience, illuminating information can be secured with regard to the rate of oral reading as contrasted with the rate of silent reading by noting the number of seconds required for each passage and the number of words in the passage.

It is not easy to determine the value of oral reading as a means of getting ideas when the work is done in class, for the simple reason that while one child is reading orally, the rest are either supplementing the test by reading silently or are neglecting the class exercise while the slow process of oral reading is going on. One way of avoiding this difficulty and of making at the same time a very interesting test of ability to understand matters heard rather than seen is to pass the single copy of the text from pupil to pupil allowing only the one who is reading to see the text and requiring all to reproduce the ideas. The pupil who reads the passage will of course be in an entirely different relation to the passage from those who hear. With reference to the different passages the various children will be successively readers and listeners.

The only satisfactory way of getting a test of the ability to understand meanings through oral reading is through individual

tests. If a teacher will test two or three pupils daily, however, the burden of such a test will not be great and a tabulated result will be of great value in checking up the other types of results which have already been discussed.

Further utilization of this test would be possible by allowing the children to read the same passage several times. Some very illuminating tests have been made of the ability to recognize simple geometrical figures after successive attempts, and so undoubtedly with the reading of passages it would be possible to get in the second or third reading great improvement over the first reading. The test would thus grow naturally into an examination of the way in which children assimilate ideas. For example, in studying the lesson in geography or history silently at his seat, the boy undoubtedly reads over certain passages several times. In some cases he reads over selected passages which offer especial difficulty, in other cases he reads over the whole lesson several times in succession. We ought to be able to determine which of these two methods of study is the more economical so that we may help children in their silent reading.

Mr. Courtis has shown in his tests the importance of the child's rate of writing as an element in any test which calls upon the child to reproduce ideas that he has acquired through reading. The child who writes slowly is disadvantaged in comparison with the child who writes rapidly, so that our definition of a child's ability to reproduce ideas should undoubtedly include ultimately his ability to write. The difficulty which is here encountered can be overcome so far as individual tests are concerned by allowing children to reproduce orally the ideas acquired. The teacher has now to note those ideas which are correctly reproduced and those which are omitted. Part of the difficulty can also be eliminated by giving the writer plenty of time. Even if he has plenty of time, however, the rate of writing will enter into the situation, because the child who writes slowly and laboriously will be distracted by the mere process of writing and his recollection of ideas will be in a measure distracted by this mere process of setting down on paper what he has recalled.